Initial Study and Negative Declaration

Year 2001 Water Purchase Agreement With Yuba County Water Agency For Support Of The Environmental Water Account

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

December 6, 2000

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PROPOSED NEGATIVE DECLARATION

Year 2001 Water Purchase Agreement With Yuba County Water Agency For Support Of The Environmental Water Account

Project Description: Yuba County Water Agency (YCWA) would sell up to 50,000 acre-feet from New Bullards Bar Reservoir between June 15 and August 31, 2001, to the California Department of Water Resources (Lead State Agency) for use by the Environmental Water Account. The Environmental Water Account (managed by the regulatory agencies USFWS, NMFS, DFG) would use the water to offset Delta pumping reductions for the purpose of protecting fish species in the Sacramento-San Joaquin River Delta. The transferred EWA water will flow into the Delta via the Yuba River, Feather River, and Sacramento River and will be pumped into the California Aqueduct at the Harvey O. Banks Pumping Plant. EWA will store the water in San Luis Reservoir or groundwater banks south of the Delta for later use or will make it available for immediate delivery to State Water Project (SWP) water contractors.

Water that is released for use by EWA will be surplus to Yuba River instream flow requirements that are in effect during the same period, and will be subject to the prior right to the use of YCWA's water supply by or for the member units of YCWA. YCWA will perform in a manner that is consistent with YCWA's historic irrigation practices and agrees to comply with section 1732 of the California Water Code to protect groundwater resources. YCWA will avoid significant adverse impacts to groundwater, including subsidence and water quality impacts. No releases of water pursuant to the agreement between the Department of Water Resources (Department) and YCWA shall confer any appropriative, public trust or other right to water on any person or entity.

The Finding: The project will not have a significant negative impact on the environment.

Basis for Finding: YCWA will ensure that it has adequate local supplies to use following the transfer to meet contracted water supply and minimum instream flow requirement. The water levels in SWP and YCWA supply reservoirs will remain within normal operational levels such that adverse environmental effects such as groundwater overdraft, erosion, subsidence, dust, excessive power use, or water supply problems will not occur.

Therefore, this Negative Declaration is filed pursuant to Section 15070 et seq. of the California Code of Regulations (CEQA Guidelines) for Implementation of the California Environmental Quality Act.

The public review period for this proposed Negative Declaration and Initial Study will end January 6, 2001. All comments or questions should be directed to DWR Delores Brown, 3251 "S" Street, Sacramento, CA 95816-7017 (916/227-2407 and fax 916/227-7554). Copies of the Initial Study are available at the above address.

Barbara J. McDonnell

Barbara J. McDonnell
Chief, Environmental Services Office

Date December 6, 2000

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Initial Study

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I. INTRODUCTION

The CALFED Bay-Delta Program identified several components to a long-term comprehensive plan to restore the ecological health and improve water management for beneficial uses of the San Francisco Bay/Sacramento-San Joaquin Delta (Delta) estuary system in its *Final Programmatic Environmental Impact Statement/Environmental Impact Report* (July 2000). The EIS/EIR is intended to provide future lead agencies, responsible agencies, and stakeholder agencies a starting point from which a range of actions can be specifically reviewed, evaluated, and implemented.

This Initial Study addresses the specific impacts from implementing the Year 2001 Water Transfer Agreement between Yuba County Water Agency (YCWA) and the Department of Water Resources (Department) for support of the Environmental Water Account (EWA). In Appendix A is background information on the larger program of establishing numerous other individual assets that will be used to create the EWA, as specified in the CALFED Bay-Delta Program Record of Decision (ROD), dated August 28, 2000. Additional California Environmental Quality (CEQA) compliance documents are being prepared for these assets, as appropriate. Under the EWA, assets acquired will be used to efficiently manage water for environmental purposes while decreasing conflicts in use of water in the Bay-Delta estuary. By using a more flexible means of managing water operations, existing fish protection measures and the implementation of the EWA will achieve substantial fish recovery opportunities while providing improvements in water supply reliability and water quality.

Purpose and Need for Action

<u>EWA Program Purpose and Need</u>

CALFED agencies identified a need in the FPEIS/EIR for additional fisheries protection measures above and beyond baseline regulatory measures to speed recovery of listed fish species. The establishment of the EWA is a key component of this additional protection. The overall purpose of the EWA is to promote flexible water project management to provide additional protection and recovery of the fisheries of the San

Francisco Bay/Sacramento-San Joaquin Delta estuary. To accomplish this purpose, the EWA will incorporate environmentally beneficial changes to the operation of the State Water Project (SWP) and the Central Valley Project (CVP), at no water cost to the projects' water users. The EWA is intended to provide sufficient protections, combined with the Ecosystem Restoration Program and the regulatory baseline, to address CALFED's fishery protection and restoration/recovery needs. This approach to fish protection requires the acquisition of alternative sources of project water supply, called "EWA assets" which will be used to:

- augment streamflows and Delta outflows;
- modify exports to provide fishery benefits during critical life history periods; and
- replace project water supply interrupted by the changes to project operations..

The EWA water will compensate for reductions in deliveries relative to existing facilities, project operations, above the regulatory baseline as defined in the ROD (Appendix A)[1]. The EWA will not be used to meet any new regulatory requirements under statutes other than the Federal Endangered Species Act and the California Endangered Species Act.

The EWA is a cooperative management program involving five agencies that have responsibility for implementing the EWA. The three Management Agencies, the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Department of Fish and Game (DFG), have primary responsibility for managing the EWA assets and exercising their biological judgment to determine what SWP/CVP operational changes are beneficial to the Bay-Delta ecosystem and/or the long-term survival of fish species, including those listed under the State and Federal Endangered Species Acts. The two Project Agencies are the U.S Bureau of Reclamation (Reclamation) and the California Department of Water Resources (Department). The Project Agencies will cooperate with the Management Agencies in administering the EWA, including banking, borrowing, transferring, selling, and arranging for the conveyance of EWA assets, and making the operational changes proposed by the Management Agencies. The EWA will be in effect for the first four years of Stage 1[2] of the CALFED Bay-Delta Program. The Department will be responsible for acquiring EWA assets for the first year (2001). After the first year, acquisitions may be made using a public process that may employ other agencies or third parties to acquire assets.

For the first year, State funds and State facilities will be used to create an operable EWA with the goal of creating water assets totaling 200,000 acre-feet. During years two through four of the EWA, both federal and State actions will be required to ensure the purposes of the EWA are met. CEQA compliance will occur for all first year actions (Appendix B)[3]. CEQA and NEPA compliance will be accomplished for EWA actions implemented in years two through four.

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[1] Appendix A contains an overview of the four-year EWA program.

[2] Stage 1 implementation covers the first seven years of implementation of the CALFED 30-year program and builds the foundation for long-term actions. The Stage 1 actions to implement the Preferred Program Alternative are described in the Record of Decision. These actions are dependent upon subsequent project-specific environmental analyses as well as on subsequent review of financial and legislative proposals by the State and Federal executive branches, Congress and the State Legislature.

[3] Appendix B contains an overview of proposed EWA first year operations.

Specific YCWA-Department Water Purchase Project Purpose and Need

The purpose of the purchase of up to 50,000 acre-feet of water from YCWA by the Department is to use this water in 2001 as an increment of the total EWA water to be obtained and used in 2001. This individual purchase is needed because it provides a substantial component of the overall EWA for 2001. The EWA Program objectives for 2001 could not be met without the YCWA-Department water exchange.

Scheduling Use of EWA Assets during Water Year 2001

The timing of targeted fishery resources within the affected streams will depend on a number of environmental factors (photoperiod, Delta outflow, temperature, etc). The periods of greatest vulnerability to aquatic resources in the Delta vary from year to year. Coordination through the CALFED Operations Group[4] and the (b)(2) Implementation Team[5] meetings will be conducted monthly to optimize all environmental water for fishery benefits. Using an adaptive management approach, EWA assets will be scheduled by the Management Agencies in coordination with the Project Agencies. Decisions designed to protect species such as chinook salmon, Delta smelt, and splittail will be made based on real-time assessments of relative risk and benefit. The following operational scenario could be used for Water Year 2001 EWA and (b)(2) actions. It should be emphasized that the following example is highly provisional; actual actions will be based upon biological factors and hydrologic conditions. Starting in December, a number of upstream and Delta planned actions could be implemented. These planned actions could include adjusting the allowable export-to-inflow ratio to pump water for the EWA. Starting as early as December 2000 or January 2001, about 300,000 acre-feet of export curtailments would be planned for implementation. About half of the amount would be debited against (b)(2) and half against EWA. SWP exports may be reduced by up to 100,000 acre-feet using available EWA assets. Similarly, CVP exports may be reduced by up to 100,000 acre-feet using (b)(2).

In January, actions would focus on improving the survival of juvenile salmon emigrating through the Delta. This would be accomplished by curtailing project exports during critical periods to increase the survival of juvenile salmon. Again, the timing and duration would be determined by a combination of biological factors and the quantity of (b)(2) and EWA assets that are available.

To ensure survival of sensitive fish species, during February and March, the projects would curtail exports when fish densities are high near the pumps. In dry conditions, this objective probably could not be met due to a lack of EWA assets. The amount of

[4] CALFED Operations Group: The CALFED Ops group is charged with coordinating the operation of the water projects with requirements of the the CALFED Framework Agreement, the December 15, 1994 Principles of Agreement for the Bay-Delta Esturary and the State Water Resources Control Board Water Right decision 95-6. DWR, USBR, NMFS, USFWS, EPA, DFG and SWRCB staff comprise the Ops group.

[5] (b)(2) Implementation Team: The (b)(2) Implementation Team implements the Central Valley Project Improvement Act Section 3406 (b)(2) reallocating 800,000 acre-feet of water for environmental purposes. Representatives of the USBR, USFWS, NMFS, DFG and DWR serve on the team.

curtailment that could be implemented during February and March is anticipated to be about 50,000 acre-feet.

In April and May both (b)(2) and EWA assets would be used to reduce exports before and after the VAMP period- Assets would also be used to fill San Luis Reservoir.

During June and July exports would be reduced to avoid high salvage of sensitive species, such as delta smelt and splittail. About 100,000 acre-feet of EWA water may be available under wet conditions to allow for additional export reductions. Other export reductions, may be covered by (b)(2) assets. For the most part, upstream actions during water year 2001 would involve water releases from reservoirs to improve instream flow conditions for migration, spawning, egg incubation, rearing, and juvenile emigration of anadromous fish.

CEQA Compliance

The California Environmental Quality Act, California Public Resources Code sections 21000 et. seq. (CEQA) requires that prior to deciding to implement a project, environmental effects of the project must be described and appropriately addressed. The documentation for acquiring EWA assets during the first year will be evaluated using either an Initial Study, Negative Declaration, Mitigated Negative Declaration, Environmental Impact Report or deemed exempt. This Initial Study and proposed Negative Declaration were prepared to comply with the provisions of CEQA. The purpose of this Initial Study is to provide decision makers, public agencies, and the general public with an objective and informative document that fully discloses any potential impacts (including mitigation associated with impacts) that could be made by the project. All phases of project planning, implementation, and operation were considered in the Initial Study of this project. The following explanation is provided to assist the reader in locating the sections where these subjects are discussed. The Project Description Section discusses actions to be taken to secure a particular water supply as part of the EWA. The Project Location Section describes the major project features. Environmental Setting and Potential Environmental Impacts Sections describe the existing environmental resources and analyzes potential impacts of the project on those resources.

II. YUBA COUNTY WATER AGENCY PROJECT DESCRIPTION

YCWA has agreed to revise its plan of operation in 2001(Appendix C), in exchange for compensation, to make available up to 50,000 acre-feet of Yuba Project water for use by the Department for EWA ("transfer water"). The Department would pay YCWA between $75.00 and $125.00 per acre-foot, depending on water year. The transfer water would be released from New Bullards Bar Reservoir into the Yuba River, during balanced conditions[6] in the Delta between June 15 and August 31, 2001, for recovery by EWA via SWP pumps. The water would flow down the Yuba, Feather, and Sacramento Rivers and into the Delta. All or a portion of the recovered transfer water could be 1) stored in San Luis Reservoir, 2) delivered directly to SWP water contractors or 3) stored in groundwater banks south of the Delta if long term storage is needed. Operations are likely to follow the first two scenarios. The increase in releases from New Bullards Bar Reservoir as part of this transfer would only result in about 40,000 acre-feet of increased pumping at the Banks Pumping Plant and subsequent equivalent increase in storage due to carriage[7] water losses through the Delta of approximately 10,000 acre-feet.

The maximum release for the Department into the lower Yuba River from Englebright Reservoir shall not exceed 1,500 cubic feet per second (cfs). Water that is released for recovery by EWA will be surplus to instream requirements that are in effect during the same period, and subject to the prior right to the use of YCWA's water supply by or for the member units of YCWA. No releases of water pursuant to the agreement between the Department and YCWA shall confer any appropriative, public trust, or other right to water on any person or entity.

The amount of water released from New Bullards Bar Reservoir will depend on the rate at which water can be pumped from the Delta for EWA and the hydrologic condition in the Yuba River between June 15 and August 31, 2001. The specific release schedule will be acceptable to both the Department and YCWA. The rate of release from New Bullards Bar Reservoir for the water transfer will be a minimum of 320 cfs and a maximum of 840 cfs assuming a continous rate of release over a 30 day and a 75 day period, respectively. With this rate of release, the flows below Englebright Dam, which would be about 1,500 cfs in normal years, would increase to between approximately 1,820 cfs and 2,340 cfs. After subtracting diversions at Daguerre Point Dam, flows measured at the Marysville Gage would be between approximately 820 cfs and 1,340 cfs. In a worst case scenario, the minimum flow would be 397 cfs, which is the low transfer rate of 320 cfs plus the minimum instream flow of 70 cfs plus an operational

[6] Balanced Conditions exist when the Department and Reclamation agree that releases from upstream reservoirs plus unregulated flow approximately equal the water supply needed to meet Sacramento Valley in-basin uses, Delta water quality and outflow requirements and Delta exports.

[7] Carriage water has been defined as "the extra amount of Delta outflow required as a result of an increase in pumping to maintain a controlling Delta water quality standard." Historically, the Department and Reclamation have assessed 20 to 30 percent of the water pumped in a north-to-south Delta water transfer to be dedicated to carriage water. This increment was assessed to mitigate for the impacts of the additional pumping caused by the transfer and thus prevent injury to the Department or Reclamation who have to maintain the Delta standards at all times.

buffer of 7 cfs. There would be step-down ramping at the conclusion of the transfer at rates not to exceed 200 cfs within any 24-hour period.

Depending on where the transfer water is stored, groundwater levels in groundwater banks south of the Delta and surface water levels in San Luis Reservoir could increase during the months of June and August and then subsequently decrease by the same amount. Levels in San Luis Reservoir would fluctuate between four and six feet.

The water level in New Bullards Bar Reservoir will decrease below normal levels by the transfer amount. Storage in Englebright Lake will be close to normal operating levels during and after the transfer. Water levels in Lake Oroville Reservoir could also be affected if the Department releases water to compensate for reduced flows to the Delta during the period when New Bullards Bar Reservoir is being refilled.

Transfer water will be limited so that the draw-down in New Bullards Bar Reservoir required for all releases will not reduce carryover storage below a level sufficient to meet local and instream requirements in 2001 and 2002, even with a 2001 or 2002 water year at the record low levels that occurred in 1977. The total amount of the transfer will not be greater than the difference in actual storage in New Bullards Bar Reservoir on September 30, 2001, and 705,000 acre-feet, critical storage, minus the quantity(s) of water for other water transfers by YCWA.

YCWA is responsible for obtaining State Board approval of this transfer pursuant to Water Code Section 1725.

Measures will be taken by YCWA to prevent adverse impacts to the State Water Project (SWP) and Central Valley Project (CVP) during the refilling of New Bullards Bar Reservoir after August 31, 2001 (Appendix D), resulting from release of transfer water in 2001. Such impacts could occur if storage vacated by the transfer is refilled during balanced conditions in the Delta. If refilling does negatively impact the SWP or CVP, YCWA will compensate impacts by releasing water during subsequent balanced flow conditions in excess of normal operating requirements (Appendix E). However, if the Department makes a flood release from Lake Oroville prior to full compensation of impacts to the SWP or if Reclamation makes a flood release from Shasta Reservoir, there will be no further requirements for releases by YCWA.

If the 2001 water year is critically dry, YCWA may have to pump additional groundwater to make deliveries to users within its service area as a result of the project. The probability of such an event, given available data, is highly speculative. If such a drought year does occur in 2001 and/or 2002, YCWA will perform in a manner that is consistent with YCWA's historic irrigation practices and agrees to comply with section 1732 of the California Water Code to protect groundwater resources. YCWA will avoid significant adverse impacts to groundwater, including subsidence and water quality impacts. YCWA agrees in cooperation with the Department, to investigate any claim of adverse impact and to adjust operations as necessary to address any such impact.

III. PROJECT LOCATION

The man-made and natural water storage and conveyance systems affected by the project are located in California ranging from Yuba County and the Sierra foothills down to Kern County and the Southern San Joaquin Valley.

New Bullards Bar Reservoir and the Yuba River

The Yuba River is a major tributary to the Feather River, historically contributing over 40 percent of the flow in the Feather River annually. The flow in the Yuba River is partially controlled by New Bullards Bar Reservoir, the largest reservoir in the watershed, which was constructed by YCWA in 1969. It has a capacity about one million acre-feet. Recent historic flows in the Yuba River below Englebright Dam during June 15 through August have been between approximately 1,700 and 2,200 cfs, during wet years and as low as 700 cfs during dry year conditions or when snowpack water content is low. Flows are about 600 cfs higher above Daguerre Point Dam during June, July, and August because of diversions at Daguerre Point Dam for irrigation demand.

YCWA stores water in New Bullards Bar Reservoir to provide irrigation water to member units that have both water rights and water service contracts and to others that have only water service contracts. YCWA has also supplied water for municipal, industrial, fish and wildlife purposes through a number of temporary water transfers lasting less than one year.

Feather and Sacramento Rivers

The larger Feather River is controlled primarily by the Department's Oroville Dam. A minimum flow of 600 cfs is maintained in the five mile low-flow section of the Feather River between the Fish Barrier Dam and the river outlet from the Thermalito Afterbay. A minimum flow of approximately 1,700 cfs is maintained in the 35-mile high-flow section of the Feather River below the Thermalito Afterbay river outlet. Simulated average July through August flow on the Feather River below the Thermalito Afterbay under baseline conditions is 5,262 cfs, with average flows of 7,597 cfs during wet years, 5,756 cfs during above-normal years, 4,677 cfs during below-normal years, 4,036 cfs during dry years, and 2,928 during critically dry years (Yuba County Water Agency 1998).

The Sacramento River is controlled primarily by Reclamation's Shasta Dam. Simulated average July-August flow on the Sacramento River at Keswick under baseline conditions is 8,964 cfs, with average flows of 12,505 cfs during wet years, 9,239 cfs during above-normal years, 7,625 cfs during below-normal years, 7,338 during dry years, and 6,051 cfs during critically dry years. (Yuba County Water Agency 1998).

Release flows from both Oroville and Shasta Dams are coordinated by the Department and Reclamation, respectively, primarily to meet water supply and environmental needs downstream.

Sacramento-San Joaquin Delta

The Delta, located at the confluence of the Sacramento and San Joaquin Rivers, serves as the major hub for the operations of both CVP and SWP. CVP operates its Tracy Pumping Plant to lift water from the southern Delta into the Delta-Mendota Canal to service CVP contractors in the San Joaquin Valley and the Tulare Basin. SWP operates its Banks Pumping Plant in the southern Delta to lift water into the California Aqueduct for delivery to SWP customers in the San Joaquin Valley and to southern California. Current SWP and CVP operations in the Delta are governed by a series of regulations and agreements with SWRCB, USFWS, NMFS, and DFG. These regulations and agreements limit the volume of water that can be exported from the Delta based on Delta hydrodynamics, water quality, and potential impacts on fisheries as determined by fish population monitoring at the pumps. The Department has determined that projected flow conditions and export demand may create a short window primarily from June 15 through August, to allow for the export of YCWA transfer water with minimal environmental impact.

Water conditions in the south Delta area are influenced in varying degrees by natural tidal fluctuation, San Joaquin River flow and quality, local agricultural drainage water, CVP and SWP export pumping, local diversions, Delta Cross Channel and tidal barrier facilities operations, inadequate channel capacity, and regulatory constraints. These factors affect water levels and availability at some local diversion points. When CVP and SWP are exporting water, water levels in local channels can be drawn down. Also, diverging and converging flows can occur in some channels. If local agricultural drainage water is pumped into the channels where circulation is poor, such as shallow, stagnant, or dead-end channels, water quality can be affected. The South Delta Temporary Barriers Project, initiated in 1991, has been used to provide short-term improvements of water conditions for the south Delta. The program involves the seasonal installation of four barriers: one in Middle River, two in Old River, and one in Grant Line Canal. Three of the barriers are designed to improve water levels and circulation for agricultural diversions. These barriers are installed by the Department and Reclamation on a seasonal basis as needed to improve water levels and water quality.

San Luis Reservoir

San Luis Reservoir is an offstream storage reservoir jointly operated by CVP and SWP. It is located near Los Banos, has a capacity of 2,041,000 acre-feet, and stores exports from the Delta to be used when the water is needed. It also is used by both systems to provide carryover capacity from wet years to dry years.

Groundwater Banks South of the Delta

The EWA will be leasing or borrowing storage space within groundwater banks south of the delta for storage of YCWA transfer water and other assets via recharge basins or direct pumping. The groundwater storage assets that EWA has negotiated agreements

for are provided in Appendix B, Table 2. In dry periods, water would be extracted from storage. In some cases, the extracted water would be conveyed directly to the California Aqueduct to supplement SWP water supply; in other cases, it would be used by local districts for domestic and agricultural uses in exchange for an equivalent amount of their SWP entitlement water. Their entitlement would then be added to the amount of SWP water available for delivery to other SWP contractors. Water extracted from the groundwater banks for delivery in California Aqueduct would be subjected to certain conditions, particularly water quality, and approval by the Department would be required at that time.

IV. ENVIRONMENTAL SETTING AND POTENTIAL ENVIRONMENTAL IMPACTS

The environmental setting and potential environmental impacts of this project are discussed below. The proposed project does not include any new construction of water facilities, infrastructure, or any other type of construction or land disturbance. The project, therefore, will not have any impact on cultural resources, hazards and hazardous materials, mineral resources, noise, transportation/traffic, and utilities and service systems. These categories are eliminated from the discussion below. Potentially affected environmental resources could include air quality, biological resources, and water quality. These impacts are evaluated below and judged to be less-than-significant impacts. The proposed project is not expected to induce growth through greater water availability, so there should not be economic, land use and planning, population and housing or public services effects.

This Initial Study identifies the following levels of potential impacts for the proposed project. A less-than significant impact causes no substantial adverse change in the environment and requires no mitigation measures, whereas a significant impact may cause a substantial adverse change in the environment and would require implementing specific mitigation measures to reduce impact to a less-than-significant level. Potentially beneficial effects, defined as potential positive changes in the environment, are identified in the text if appropriate but are not shown on the checklist (Appendix F).

YCWA has undertaken similar transfers in prior years and has prepared environmental documents for each transfer (Bureau of Reclamation 1997 and 1999). These past evaluations have not identified any adverse environmental impacts.

Aesthetics and Recreation

New Bullards Bar, Englebright, Oroville and San Luis Reservoirs accommodate activities such as swimming, boating, water-skiing, fishing, camping, and picnicking.

Common activities along the Yuba, Feather, and Sacramento Rivers and within the Delta include boat and shore fishing, pleasure boating, swimming, picnicking, and camping. Riparian vegetation along these rivers is conducive to sightseeing, bird watching, photography, and relaxing.

The groundwater recharge basins provide habitat for waterfowl and water birds and provide opportunities for bird watching.

> Impacts: New Bullards Bar Reservoir storage levels would be up to 50,000 acre-feet lower with the implementation of the water transfer. This level of draw-down is approximately a 14-foot change in water level (less than 7 percent of the total operating storage). Lake Oroville water levels could be decreased by as much as 3 feet under the project, but these changes would not represent any significant change from normal fluctuations experienced by reservoir users, and recreation

opportunities would not be decreased. The project would not cause significant adverse impacts to recreation or aesthetics on San Luis or Lake Oroville Reservoirs.

Englebright Reservoir elevations would not be changed. Increased water storage of up to 40,000 acre-feet in San Luis Reservoir would have minimal beneficial effects. Similarly, flows on the Yuba, Feather, and Sacramento Rivers and in the Delta would be higher during the transfer but within the range of normal flow fluctuations. Any impacts to recreation and aesthetics would be minimal and beneficial. The proposed water transfer does not require mitigation for aesthetic or recreation impacts.

Agricultural Resources and Economic Impacts

Over 600,000 acres[8] of agricultural land is irrigated by water that is provided by the SWP and YCWA. Crops include corn, winter wheat, walnuts, tomatoes, grapes, and rice. The SWP and YCWA provide water for domestic and industrial uses as well.

Impacts: The project will continue the current level of reliability of water deliveries to SWP contractors and their water users while complying with environmental regulations. The amount or timing of water delivered to agricultural water users and domestic and industrial water users within the YCWA service area will not be changed by implementation of the project. Delivery of the transfer water to EWA is subject to the water rights and needs of users within the YCWA service area. The water transfer does not require mitigation for agricultural or economic impacts. YCWA agrees to comply with section 1732[9] of the California Water Code with respect to groundwater extraction from the Yuba basin.

Air Quality

The proposed project is within the Sacramento Valley and San Joaquin Valley air basins.

Impacts: There are no construction activities with this water transfer agreement that might affect air quality. Affected reservoirs will be within the range of normal operating conditions which do not pose any air quality problems, and therefore, this project will not create dust problems to significantly affect air quality. Increased emissions caused by the possible use of fossil fuels to meet increased pumping demand during summer peak periods is regulated by existing ambient air quality standards maintained by the Air Quality Resources Board. Any such impacts would be less than significant. The proposed water transfer does not require mitigation for air quality impacts.

[8] Source: California State Water Project Atlas

[9] CA Water Code, Section 1732. The petitioner shall not initiate or increase the use of gourndwater to replace surface water transferred pursuant to this article, except in compliance with Section 1745.10 and 1745.11.

Biological Resources - Fisheries

The analysis of impacts on fishery resources is focused on the reservoirs where operational changes are anticipated (New Bullards Bar, Lake Oroville and San Luis Reservoirs), the rivers used for the conveyance of the acquired water (Yuba, Feather, and Sacramento Rivers), and the Delta.

Reservoirs

The game fish found in New Bullards Bar Reservoir include rainbow trout, kokanee, brown trout, largemouth bass, smallmouth bass, crappie, sunfish, and bullhead. Lake Oroville Reservoir has much the same species assemblage as New Bullards Bar Reservoir. San Luis Reservoir has similar fisheries resources including species introduced from the Delta, such as striped bass.

Fish production in these reservoirs is generally limited by changes in water elevations during critical spawning periods, overall reservoir levels, and the availability of shallow near-shore rearing habitat.

Impacts: New Bullards Bar Reservoir storage levels would be up to 50,000 acre-feet lower with the implementation of the water transfer. This level of draw-down is approximately a 14-foot change in water level (less than 7 percent of the total operating storage). It is expected that there would be a temporary, minor, and less-than-significant adverse effect on New Bullards Bar Reservoir fisheries. Associated draw down would occur between the period of June 15 and August 30, and water levels during the major fish spawning period (during April, May, and June) would be relatively unaffected (U.S. Bureau of Reclamation 1999).

Lake Oroville water levels would be affected if the SWP had to release additional flows to meet water quality standards in the Delta because of water being held back by YCWA after the water transfer to refill New Bullards Bar Reservoir. The level of draw down would be no more than a 3 feet change and would most likely occur in the winter or spring. Spawning fish could be affected, but the timing and level of draw-down is not outside the range of normal operating conditions for Lake Oroville and therefore, fisheries impacts would be less than significant.

The proposed action may increase reservoir storage levels at San Luis Reservoir by as much as 40,000 acre-feet by the end of August. If all of the transfer water was held as storage in San Luis Reservoir, a rise in water level by as much as six feet would result. There could be an associated temporary minor beneficial effect on San Luis Reservoir fisheries resources because the increased storage associated with the transfer would provide greater amounts of habitat for reservoir species. It is likely that the transfer water in San Luis Reservoir will be held only for a short time before it is delivered to water contractors.

Rivers

Chinook salmon, spring-run chinook salmon, steelhead trout, and American shad spend part of their life cycle in the Yuba, Feather, and Sacramento Rivers. Resident fish include rainbow trout, smallmouth bass, largemouth bass, Sacramento sucker, Sacramento pike, minnow, common carp, and stickleback sculpin. The Yuba and Feather Rivers maintain spawning, rearing, and migration habitat for two special-status species: spring-run chinook salmon and Central Valley steelhead. The Sacramento River provides migration and rearing habitat for these two species, as well as providing spawning, rearing, and migration habitat for the endangered winter-run chinook salmon. In the lower portions of the Sacramento River, special-status and sensitive species also include delta smelt and Sacramento splittail.

During water transfer flow releases, from June 15 through August in the Yuba and Feather Rivers, spring-run chinook salmon will be migrating or holding in the Yuba River. Juvenile steelhead trout will be rearing.

Impacts: The rate of release from New Bullards Bar Reservoir for the water transfer will be a minimum of 320 cfs and a maximum of 840 cfs assuming a continuous rate of release over a 30 day and a 75 day period, respectively. With this rate of release, the flows below Englebright Dam, which would be about 1,500 cfs in normal years, would increase to between approximately 1,820 cfs and 2,340 cfs. After subtracting diversions at Daguerre Point Dam, flows measured at the Marysville Gage would be between approximately 820 cfs and 1,340 cfs. In a worst case scenario, the minimum flow would be 397 cfs, which is the low transfer rate of 320 cfs plus the regulatory minimum instream flow of 70 cfs plus an operational buffer of 7 cfs. There would be step-down ramping at the conclusion of the transfer at rates not to exceed 200 cfs within any 24-hour period. These increases in flow would not result in adverse effects on fisheries resources upstream or downstream of Daguerre Point Dam. The additional transfer releases will improve habitat conditions for coldwater species by reducing water temperatures. The step-down ramping at the conclusion of the transfer would avoid any stranding of fish. Because the water acquisition would be completed before the fall spawning period for salmon and winter spawning period for steelhead, there would be no risk of redd dewatering. Some minor benefits could result from this action by decreasing water temperatures for upstream migrating or holding adult spring-run chinook salmon, or rearing juvenile steelhead.

During previous water transfers involving YCWA, concern has been expressed about the loss of cold water reserves for fall releases from New Bullards Bar Reservoir. Monitoring conducted for SWRCB following YCWA's 1997 water transfer to Reclamation indicates that a 75,000-acre feet reduction did not significantly reduce available coldwater storage. It is reasonable that a 50,000-acre feet reduction in storage volume would have even less impacts and result in minor, less-than-significant effects.

Increases in flows during June 15 through August in the lower Feather River and Sacramento River from the transfer water will not have any adverse effects on fisheries. Feather River species preferring lower water temperatures, such as any juvenile or adult steelhead trout or chinook salmon in the river during the transfer, may benefit from the increased releases of cool water. Because of the relatively large volume of summer flows in the Sacramento River, changes in flows resulting from the water acquisition would be small (less than 10 percent) and effects on fish in the Sacramento River would be negligible.

This proposed project will not compromise the environmental regulations that specify minimum flow requirements for winter-run and spring-run chinook and Central Valley steelhead. Required fisheries releases from New Bullards Bar Reservoir, Englebright Reservoir, and Oroville will continue to be met.

Delta

All anadromous fish of the Central Valley either migrate through the Delta to spawn and rear upstream or are dependent on the Delta to provide some critical part of their life cycle. Delta smelt, green sturgeon, Sacramento splittail and delta smelt are special-status and sensitive species that reside in the Delta.

Impact: The current regulatory requirements for managing Delta exports, as described below, will preclude the occurrence of any significant impacts on fish as a result of the pumping of transfer water from the Delta. Any increment of the acquired water that is exported from the Delta would be transferred through SWP regulated capacity and would meet all of the existing environmental agreements, which include:

- 1993 Winter-run Chinook Salmon Biological Opinion (NMFS);
- 1995 Delta Water Quality Control Plan, State Water Resources Control Board (SWRCB); and
- 1995 Delta Smelt Biological Opinion (USFWS);

Consequently, the transfer water becomes part of the overall SWP or CVP water supply with attendant environmental limitations for exporting water from the Delta. The impacts on the Delta from CVP/SWP making full use (within prescribed constraints) of its pumping capacities and any necessary mitigation have been documented (U.S. Bureau of Reclamation 1992, California Department of Water Resources 1986). In addition, this project was developed cooperatively and in accordance with recommendations from NMFS, USFWS, and DFG. Although fishery impacts will occur due to summer Delta diversions, it is the intent of the EWA to have an overall benefit to Delta fisheries through its actions that exceed the regulatory baseline established by the above environmental agreements. The use of the transfer water by the EWA in 2001 to reduce pumping in the Delta during critical times for delta smelt, Sacramento splittail, juvenile winter-run, spring-run chinook salmon, and juvenile steelhead will reduce the cumulative level

of mortality experienced by these species from Delta pumping when compared to the baseline conditions without the EWA Program.

In general, water transfers such as the water exchange between YCWA and Department have been identified as an effective means of minimizing overall environmental effects and increasing CVP/SWP operational flexibility (State Water Resources Control Board 1995).

Biological Resources - Plants and Wildlife

DFG's Wildlife Habitat Relationship Program identifies 249 species of wildlife that use the valley and foothill habitats of the Sacramento Valley. Riparian zones in the basin, the only terrestrial habitat affected by this project, provide migratory corridors, food, and cover for wildlife species typical of riverine and upland areas. Numerous special-status and sensitive plant and wildlife species occur in the Sacramento River Basin, including wildlife species that prefer riparian habitats, such as Swainson's hawk, western yellow billed cuckoo, willow flycatcher, western pond turtle, valley elderberry longhorn beetle, and bald eagle.

The recharge basins provide habitat for waterfowl, wading-birds, and shorebirds when they are being utilized.

Impact: New Bullards Bar Reservoir supports a pair of nesting southern bald eagles. Bald eagles are listed as endangered under the California Endangered Species Act and listed as threatened under the Federal Endangered Species Act. Bald eagle reproduction can be adversely affected by extreme draw-down of reservoirs during periods when chicks are in the nest. Young bald eagles typically fledge and leave the nest and the reservoir areas by late June or early July. Reservoir draw-down from the project will be within historic and recent levels. Most of the changes in reservoir levels associated with the project will occur outside of the nesting period or when young are leaving the area, and therefore, will not effect bald eagle.

The spreading of water in recharge basins for storage in groundwater banks will temporarily increase habitat for waterfowl, wading-birds, and shorebirds.

No additional areas would be flooded or inundated by the project. The project would also not result in the development or cultivation of any native untilled land. Overall, there would not be any significant impacts on any vegetation or wildlife in the area affected by the project. There would be no adverse impacts on any state or federal special-status plant or animal species.

Energy and Power

The SWP hydroelectric facilities are part of the large multipurpose SWP encompassing such beneficial uses such as power production, flood control, irrigation water supply,

municipal and industrial water supply, habitat for fish and wildlife, improved water quality, and recreation. The major factors in power plant operation are the required downstream releases, electric system needs, and project-use demand. The SWP has hydroelectric plants at Hyatt, Thermalito, Gianelli, Warne, Castaic, Alamo, and Devil Canyon. Energy generation at these plants in 1995 totaled 4,759,035 megawatt-hours (MWh).

YCWA operates hydroelectric plants to produce power when water is released from New Bullards Bar Reservoir.

> Impact: The proposed action would both create and use power. The release of transfer water from New Bullards Bar Reservoir and Englebright Reservoir would generate power for both Pacific Gas and Electric (PG&E) Company and YCWA. Coordination between YCWA and PG&E to maximize power generation with the constraints of this water acquisition would take place as it has for all past YCWA water transfers. The pumping of 40,000 acre-feet of water at the Banks Pumping Plant will require an approximate 5 percent increase in pumping and power use between June and August. However, there would be an equivalent level of reduction in pumping during the spring when pumping is being curtailed to protect Delta fisheries. If water were stored as groundwater, the use of power for extraction and recharge may increase beyond typical levels, but storing the water from this transfer in groundwater banks is unlikely. The overall impact associated with both increased generation and use is less-than-significant in the context of overall operations.

Environmental Justice

The federal requirement for environmental justice refers to the fair treatment of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Executive Order 12898, signed by President Clinton in 1994, requires federal government agencies to consider the potential for their actions or policies to place disproportionately high adverse human health or environmental effects on minority and low-income populations. Potential effects related to environmental justice would be effects that disproportionately affected minority populations.

Two State statutes were enacted to address State coordination and consultation requirements for Environmental Justice. These statutes, SB 115 (Solis) and SB 89 (Escutia) parallel federal mandates for environmental justice. SB 115 requires the Secretary for the California Environmental Protection Agency (CA EPA) to take specified actions in designing its mission for programs, policies, and standards within the Agency, and to develop a model environmental justice mission statement for boards, departments, and offices. SB 89 specifically requires the Secretary for CA EPA to convene a Working Group on Environmental Justice on or before January 15, 2002 to assist the CA EPA in developing an interagency environmental justice strategy.

Impact: This project will not disproportionately affect minority or low income populations since YCWA and EWA have structured the water transfer agreement to insure that the demands of YCWA customers are met first before EWA water is guaranteed. In addition, YCWA's groundwater sources would not be used to the extent that there would be environmental effects on rural agricultural populations.

Geology and Soils

The New Bullards Bar, Englebright, San Luis, and Oroville Reservoirs are not lined and are subject to erosion.

Impacts: There will be no construction or significant changes in water levels in the affected reservoirs that might result in seismic hazards or significant levels of erosion. All impacts on geology and soils as a result of the project are considered to be less than significant. Reservoirs will not be drawn down below normal levels and erosion is not expected. The overall change in hydrology of the Yuba, Feather and Sacramento Rivers from the transfer will not cause adverse impacts from erosion or cause additional seepage.

Water Resources

Surface Water

See the Project Location section of this document for a discussion of the environmental setting.

Impacts: Although the hydrologic pattern will be altered with implementation of the project, the reservoir levels and flows will not be outside the range of normal operating conditions. There will be no increased flooding risk since YCWA, San Luis and the California Aqueduct will continue to maintain flood storage space for the duration of this agreement.

Groundwater

See the Project Location section of this document for a discussion of the environmental setting.

Impacts: Transferred water would only be stored in groundwater banks if storage in San Luis Reservoir is unavailable due to a very wet year in 2001, or if the water requested by SWP contractors did not require the delivery of all of the transfer water. Storing the excess water in groundwater banks would make storage space in San Luis Reservoir available for 2002. The water that is stored as groundwater by EWA will likely be extracted by the storing agency for use in dry years as part of their entitlement or it could be conveyed to the California Aqueduct to supplement SWP water supply.

The amount of water that will be extracted will be equivalent to the amount that was deposited. The deposit and extraction of ground water will result in an increase in water levels in wet years and ensuing decrease in dry years. There will not be subsidence impacts because ground water levels will be within their historic range, and current groundwater levels will not be decreased as a result of this project. The quality of SWP surface water is relatively good. There will be a decrease in water quality once the water is recharged and subsequently extracted. However, the extracted water will be used in dry years and SWP surface water that would otherwise be delivered to fulfill entitlement in dry years would be of relative low quality due to water being released from lower surface water levels in the San Luis Reservoir. Water deliveries would still need to meet contractual water quality objectives.

If the 2001 water year is a critically dry year similar to 1977, YCWA may have to pump additional groundwater to make deliveries to users within its service area as a result of the project. The probability of such an event, given available data, is highly speculative. If such a drought year does occur in 2001 and/or 2002, YCWA will perform in a manner that is consistent with YCWA's historic irrigation practices and agrees to comply with section 1732 of the California Water Code. Yuba will avoid significant adverse impacts to groundwater, including subsidence and water quality impacts. YCWA agrees in cooperation with the Department, to investigate any claim of adverse impact and to adjust operations as necessary to address any such impact.

Water Quality

The Department monitors SWP water quality to ensure that SWP water quality meets Department of Health Services drinking water standards and Article 19 Water Quality Objectives for long-term SWP contracts[10]. The objective of the SWP water quality monitoring program is to maintain project water at a quality acceptable for recreation, agriculture, and public water supply for the present and future under a policy of multiple use of the facilities. These uses include fishing, boating, and water contact sports. The Department analyzes the water for physical parameters such as water temperature, specific conductance, and turbidity and more than 60 different chemical constituents including inorganic chemicals, pesticides, and organic carbon potential. The monitoring program has stations throughout the SWP including the O'Neill Forebay in San Luis Reservoir, the California Aqueduct and terminal reservoirs such as Silverwood Lake, Lake Perris, Pyramid Lake, and Castaic Lake.

YCWA insures the quality of its water supplies as required by Department of Health Services regulations. YCWA monitors the quality of its water sources (water before it

[10] Article 19 Objectives are included as standard provisions in the Department's water supply contracts. They require the collection and analysis of water quality samples in the SWP and the compilation of records. Article 19 (a) states: "It shall be the objective of the State and the State shall take all reasonable measures to make available, at all delivery structures for the delivery of Project water to the District, Project water of such quality that the following constituents do not exceed the concentrations stated." The constituents table is in Appendix F.

reaches the water treatment plant), its finished water (water after it has been treated at the water treatment plant), and water within the distribution system.

Impacts: The EWA is responsible for mitigating its water quality impacts as required under the 1995 Delta Water Quality Control Plan (SWRCB). Some operational changes may have to be made to meet these standards, but the Department's ability to meet the standards will not be compromised.

Impacts on Yuba River water quality from the project would be less than significant. The hydrologic effects of the water acquisition are within the hydrologic and operating conditions that have occurred historically within the affected reservoirs, and Yuba River system. The water proposed for sale is subject to the prior right to the use of YCWA's water supply by or for the member units of YCWA. Consequently, if water quality impacts are realized, deliveries to EWA will be adjusted accordingly.

See previous groundwater subsection under the water resources section for water quality impacts associated with this resource.

V. CUMULATIVE EFFECTS

Cumulative effects result from the incremental impact of the proposed water transfer when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or entity undertakes them. Cumulative effects can result from individually minor, but collectively significant, actions taking place over time. CALFED actions, Central Valley Project Improvement Act (CVPIA) actions, and ongoing SWP and CVP operations and actions, in particular, are all highly adaptable programs subject to great change as hydrologic, environmental, regulatory, and water supply conditions change. Because the proposed water transfer increases operational flexibility, analysis of cumulative effects must necessarily be speculative and general.

Ongoing operations of YCWA, SWP, CVP, CALFED's Operations Group, and water contractors are complex and part of the affected environment. Both SWP and CVP are complex networks of reservoirs and delivery systems. SWP management decisions to provide water for SWP water contractors requires balancing water for irrigation and domestic water supplies, fish and wildlife protection, restoration and mitigation, and power generation. In developing operations decisions, both YCWA and the Department use criteria related to reservoir operations and storage, downstream conditions and needs, prevailing water rights and environmental requirements, flood control requirements, carryover storage objectives, reservoir recreation, power production capabilities, cold water reserves, pumping costs, contract requirements, and other factors. The possibility of using multiple water sources for some requirements and environmental opportunities adds flexibility to project operations and complexity to operations decisions.

The EWA is expected to make relatively small changes in the overall operations of the SWP and CVP facilities. Operational changes in 2001 can be generally characterized as shifts in pumping rates at the SWP delta diversion pumps, shifts in the storage and release patterns at SWP reservoirs, shifts in groundwater pumping and storage patterns within the KCWA, and shifts in surface water storage release patterns among local and regional agencies. Operations related to EWA will be affected by precipitation. In wet years, surface water will be the primary EWA asset and in dry years, groundwater will become the primary EWA asset and operations will shift accordingly.

The EWA will allow the further curtailment of Delta pumping to reduce the entrainment of fish at the SWP Banks pumping plant to achieve benefits beyond the existing environmental baseline. Pumping could increase when substantial impacts to sensitive fish are not likely, in order to move water controlled by the EWA. However, the final pumping pattern will remain within the possible patterns that the SWP is allowed under the existing SWRCB Water Quality Control Plan (WQCP).

San Luis Reservoir storage will drop in response to EWA Delta export cuts or if the EWA delivers water out of San Luis Reservoir to repay past borrowing from local agencies. San Luis Reservoir storage will increase in response to higher Delta exports on behalf of

the EWA or due to voluntary shifts in delivery patterns, water purchases in the export area, exchanges, or source shifts. However, San Luis storage patterns will range within the patterns that the CVP and SWP already allow under existing regulations.

Purchases from the member units of the KCWA will generally lead to increased groundwater pumping in 2001, with recovery of groundwater levels in subsequent years. If EWA takes advantage of the opportunity to deposit water into groundwater storage, groundwater levels could rise in 2001 in KCWA aquifers. Withdrawal could take place either in 2001 or in subsequent years.

Yuba will avoid significant adverse impacts to groundwater, including subsidence and water quality impacts. Therefore, significant impacts to groundwater within the Yuba basin will not result from implementation of the project.

A source shifting agreement with MWDSC could lead to lower reservoir levels within the MWDSC service area (including Castaic Reservoir). The water purchase from YCWA would lead to a reduction in storage levels in New Bullards Bar Reservoir over the course of the summer of 2001. That storage reduction would either be recovered through reduced spills in the following winter(s).

This project may affect Oroville Reservoir storage levels if releases have to be made to prevent water quality impacts in the Delta during the period when New Bullards Bar Reservoir is being refilled. Changes in storage levels and release patterns at Oroville Reservoir may also result from changes in operations at the Banks pumping plant in the Delta as a result of other EWA projects. In most instances, changes in operations will lead to temporary increases in storage levels. In some instances, the EWA could borrow water from upstream reservoirs, thereby lowering storage levels.

The nature of the EWA Program, specifically, acquisition of up to 385,000 acre-feet of water from various sources, along with the regulatory framework currently in place, makes the potential for significant adverse cumulative impacts during 2001 implementation and over the life of the proposed program highly unlikely. Impacts are particularly unlikely for above normal water years. However, future EWA purchases in addition to drought management actions undertaken in below normal water years will need to be carefully managed to ensure future cumulative impacts do not occur. These future actions will be discussed in future CEQA documents and among the Governor's Drought Advisory Panel. The EWA Program is being implemented and will be adaptively managed to actually maintain and/or benefit both Delta fisheries and contractor water supplies. The goals of many of these related programs and projects are similar, and there are no significant cumulative impacts identified from the array of proposed projects. EWA will be using this first year of actions to fully monitor all effects of the program.

VI. MANDATORY FINDINGS OF SIGNIFICANCE

The project does not have the potential to significantly affect an environmental resource. Consequently, there are no mandatory findings of significance.

VII. MITIGATION MEASURES FOR ANY SIGNIFICANT EFFECTS

This project will not significantly affect any environmental resources. Consequently, there are no mitigation measures necessary or proposed.

Information gathered during this first year of the EWA will assist in the preparation of subsequent CEQA documents.

VIII. CONSISTENCY WITH PLANS AND POLICIES

Coordination Operations Agreement
The Project Agencies shall continue to adhere to the general sharing principles contained in the 1986 Coordinated Operations Agreement (COA) as modified by interim operating agreements to reflect changes in regulatory standards, facilities, and operating conditions, including the EWA.

Yuba County Water Agency
- California Water Code Section 1732
- Department of Health Services Drinking Water Standards
- State Water Resources Control Board Oders and FERC Agreements
- PG&E agreements

State Water Project
- South Delta Improvements
- Kern Water Bank
- Department of Health Services drinking water standards
- Article 19 Water Quality Objectives for long-term SWP contracts
- 1993 Winter-run Chinook Salmon Biological Opinion (NMFS);
- 1995 Delta Water Quality Control Plan, State Water Resources Control Board (SWRCB);
- 1995 Delta Smelt Biological Opinion (USFWS);

IX. CONSULTATION AND COORDINATION

This initial Study was prepared in consultation and coordination with applicable requirements. The Department is the Lead Agency responsible for the preparation of this Initial Study.

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XI. REFERENCES

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APPENDIX A

Overview of Four Year EWA Program

The EWA was established to provide a supplemental water supply for the protection and recovery of fish beyond what currently exists through the pre-CALFED Program environmental baseline. The existing regulatory baseline[11] programs established to provide a level of fishery protection include:

- 1993 Winter-run Chinook Salmon Biological Opinion (NMFS);
- 1995 Delta Water Quality Control Plan, State Water Resources Control Board (SWRCB);
- 1995 Delta Smelt Biological Opinion (USFWS);
- management of the full 800,000 acre-feet of CVP Yield Pursuant to Section 3406(b)(2) (or (b)(2) Water) of the Central Valley Project Improvement Act (CVPIA) ; and
- other environmental protections, including Level 2[12] refuge water supplies as required by the CVPIA.

Assets acquired for the EWA will vary from year to year depending on hydrologic and regulatory conditions, and are therefore not certain. As stated in the Introduction, the EWA will be implemented over four years. The initial water purchases and lease of groundwater storage will be secured by the Department from willing sellers by the end of 2000. The Project Agencies will enter into one-year contracts with the willing sellers. Several processes may be used to acquire EWA assets and/or functional equivalent sources of project water supply to offset the effects of operational curtailments under the EWA program so that deliveries will not be affected.

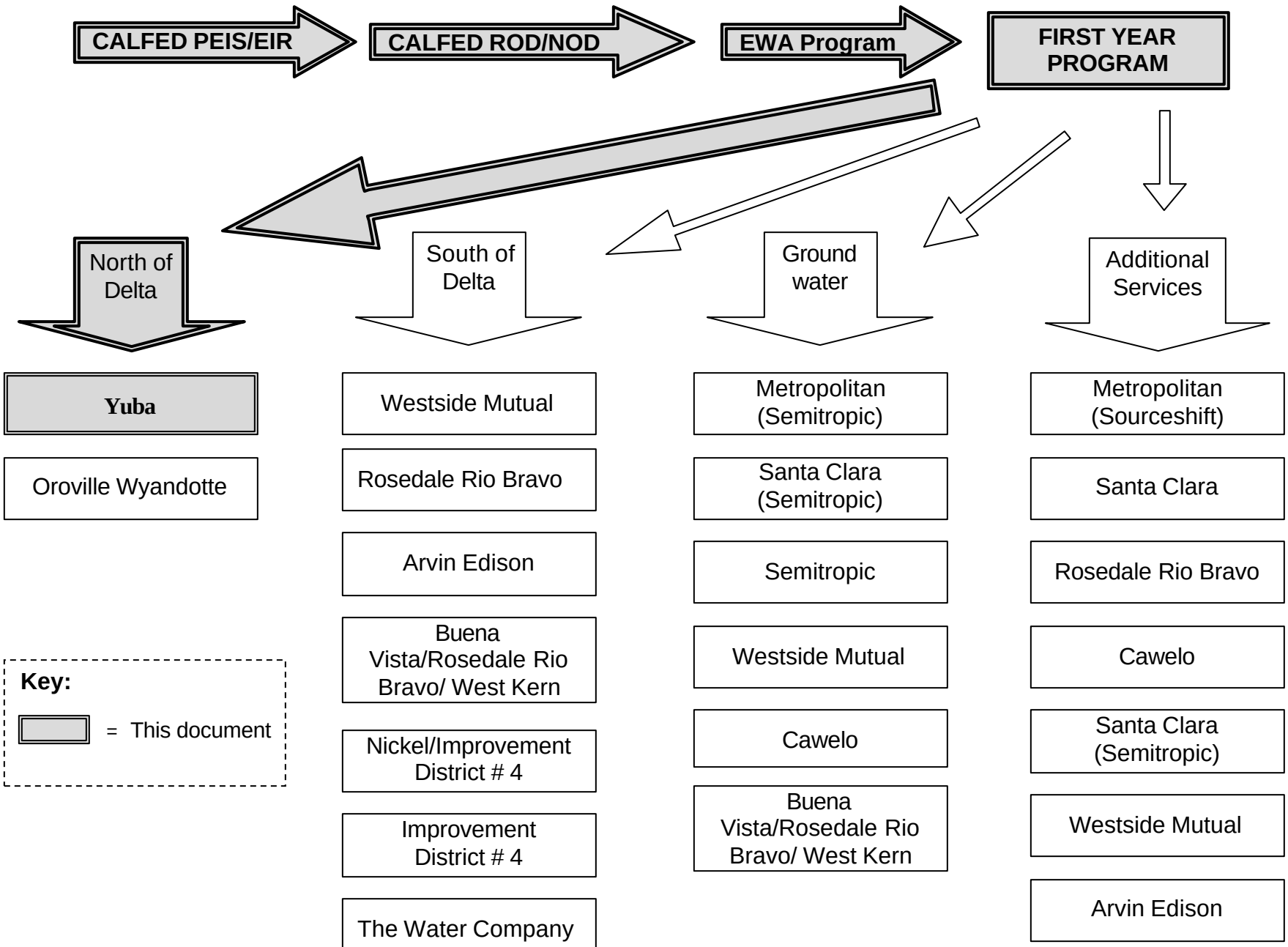
1. Acquisition of Water for the EWA

A. Proposed Purchases

The Department will use EWA funds to purchase EWA assets from willing sellers both north and south of the Delta. Purchases can include leases, options, long-term agreements, and any other property or contractual transaction that make alternative project supplies available south of the Delta or available for conveyance to south of the Delta. Purchases will also include the acquisition of storage space in groundwater basins

[11] If an operable EWA is not in place by December 31, 2000, then the existing regulatory baseline would remain in place.
[12] Level 2 – The 1989 and 1992 Refuge Water Supply Studies define Level 2 refuge water supplies as the average amount of water the refuges received between 1974 and 1983.

Figure 1. EWA First Year Asset Acquisition



to bank EWA assets. The Management Agencies will identify assets to replace water lost to the projects due to operational curtailment, and to be pledged as collateral when the EWA borrows from the Projects. The Project Agencies will accept the asset if the collateral meets the agreed guidelines for borrowing. The release of the asset shall be in accordance with a schedule agreed to by both the Management Agencies and the Project Agencies. A tentative release schedule will accompany an identified asset. The Project Agencies will coordinate EWA water acquisition with Level 4[13] refuge water acquisitions to ensure the priority accomplishment of both each year.

B. Delta Operations

Delta project operations will involve four mechanisms by which EWA water assets are acquired.

i. Sharing of (b)(2) and Ecosystem Restoration Program (ERP) Water Pumped by the SWP.

The SWP and the EWA will share, on a 50-50 basis, the lesser of:

a) water released from storage or made available for upstream purposes under either CVPIA Section 3406(b)(2) or the Ecosystem Restoration Program (ERP) which arrives in the Delta with no further ERP or (b)(2) purposes to serve;
b) water that exceeds the export capacity of the CVP Tracy pumping plant;
c) water that the SWP and EWA have demanded south of the Delta; and
d) water the SWP has capacity to pump.

ii. Joint Point[14]: SWP Wheeling of CVP and EWA water.

The SWP will use excess capacity at its Harvey O. Banks Pumping Plant to pump water for both the CVP and the EWA, to be shared between them on a 50-50 basis. The CVP water could be either from storage or from its Delta water rights to divert unstored water. The EWA water could be either from non-project water acquired north of the Delta or stored or unstored water pumped under CVP or SWP water rights. If either the CVP or EWA is demand-limited[15], the other's use of joint point will not count against its 50 percent share.

The relative priority of use of excess capacity at Banks for the EWA water and any CVP and Level 4 refuge water[16] is currently being determined.

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[14] The term joint point is used here to refer primarily to the use of the SWP point of diversion alone, and specifically, to the wheeling of EWA as well as CVP water.

[15] Demand-limited – A project is demand-limited in no contractors want any more water than they are currently receiving and if available storage facilities and/or conveyance facilities are full.

[16] Level 4 – Level 4 refuge water supplies are defined in the 1989 and 1992 Refuge Water Supply Studies as the amount of water for full development of the refuges based upon management goals developed in the 1980s.

iii. SWP Appropriation of Unregulated Flow.

The SWP may use its Delta diversion rights to pump water from the Delta for EWA purposes when the demand for SWP supplies is less than supply. The SWP diversion rights would be used in cases where Joint Point could also be used but where it would be preferable to create EWA assets south of the Delta to offset SWP rather than CVP losses to operational curtailments. As an adjunct to Joint Point, it would simply utilize SWP rather than CVP water rights to pump excess flows for the EWA's share. It would not affect the CVP's own share of excess SWP capacity.

iv. Project Pumping made Possible by Regulatory Relaxation

(a) Relaxation of the Section 10 Constraint

The SWP is limited under Section 10 of the Rivers and Harbors Act[17], pursuant to US Army Corps of Engineers (Corps) Public Notice 5829-A, to a three-day average rate of diversion of water into Clifton Court Forebay of 13,250 acre-feet per day. This is equal to an average, around the clock diversion rate of 6,680 cfs. This rate may be increased during winter months when the San Joaquin River flow is above 1,000 cfs.

The Corps granted permission to the SWP to increase the base diversion rate by the equivalent of 500 cfs to an average of 7,180 cfs for the months of July through September, through 2002. This 500 cfs will be dedicated to pumping for the EWA.

(b) Relaxation of the Export/Inflow Ratio

Under D-1641[18], and anticipated under the SWRCB order to be issued upon completion of the Bay-Delta water rights hearing, project exports are limited at different times of the year to a certain percentage of Delta inflow (usually 35 or 65 percent). This limitation is called the Export/Inflow, or E/I ratio. Both D-1641 and the 1995 Water Quality Control Plan, consistent with the 1994 Principles for Agreement (Bay-Delta Accord), allow for these ratios to be relaxed upon the meeting of certain requirements. Relaxation of the E/I ratio will be sought as appropriate and used to create EWA assets south of the Delta. By relaxing the E/I ratio, up

[17] Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the Army Corps of Engineers. Under Section 10, the Corps regulates projects or construction of structures that could interfere with navigation. A department of the Army permit is needed to construct any structure on any navigable water of the United States, to excavate or deposit material in such waters, or to do any work affecting the course, location, condition, or physical capacity of such waters.

[18] D-1641-The State Water Resources Control Board issued Decision 1641 on December 29, 1999. The order requires DEPARTMENT and the USBR maintain their respective outflow standards until November 30, 2001 or until the Board adopts a further decision during its water rights hearings. It is currently in litigation, but DEPARTMENT continues to voluntarily comply with the standards.

to 20 TAF could be exported for the EWA. This water would be exported by the SWP and held in San Luis Reservoir for later use.

2. Banking of EWA Assets

A. Generally

Banking is the storage of water for later use that otherwise would be used or lost in the present. Water can be banked and used within the same water year or carried over for use in a subsequent water year. Even though the acquisition of stored water does not carry the idea of converting a transitory asset into a durable asset, it is included here as an EWA banking transaction as well as a specific EWA asset acquisition. Like the acquisition of assets, banking transactions must provide for access to and the release of the stored EWA assets to the projects.

Priority of EWA assets in storage generally will trigger the provisions of the banking document. Unless the Management Agencies and the Project Agencies make other arrangements, EWA assets will have a lower priority for storage in project reservoirs than regular project storage and thus will spill first. Regular project storage includes reservoir operations for project purposes, such as flood control, downstream temperature control, minimum downstream flows for fish, regulatory requirements, and contract water supply including contractor carryover water. Usually, if imported water is physically stored in a groundwater basin, the storing agency will have a first and exclusive right to the water stored.

B. Banking in Project Reservoirs

EWA assets may be stored or "banked" in project reservoirs upstream of the Delta as well as in San Luis Reservoir, provided the Projects do not incur any additional adverse operational impacts. The EWA will share this lower storage priority with water acquired for Level 4 refuge needs. The Project and Management Agencies shall jointly establish reasonable and practical standards for determining when an EWA asset may be stored and when it would spill or be lost from upstream project storage.

Banking EWA water south of the Delta will be important because it creates highly reliable assets which are both durable and which may be released without Delta constraints being an issue.

C. Groundwater Banking

At times, the EWA may bank surface water within existing groundwater banks to prevent loss by spilling from project reservoirs. Usually, if imported water is physically stored in a groundwater basin, the storing agency will have a first and exclusive right to the water stored.

D. Source-Shifting Agreements

The purpose of water banking is to have water available for use at a time other than its original availability. Source-shifting agreements fall under this functional definition of “banking”. Source-shifting agreements are executed with a water agency that is able, at certain times, to call on non-Delta water sources to temporarily create an asset for use by the EWA. In these cases, the water agency is agreeing to a reduction in deliveries so these assets can be used for EWA operational curtailments. Replacement of the source-shifted water occurs at a mutually agreed upon time with the water agency without any incremental impacts to the Projects.

A source-shifting agreement with The Metropolitan Water District of Southern California (MWDSC) is an example of such as banking arrangement. MWDSC will provide 100 to 200 TAF to be used to enhance the effectiveness of the EWA, and to help provide assurance that SWP and CVP water deliveries and operations will not be affected by EWA operations.

3. Borrowing

Borrowing agreements will allow the EWA to borrow water from the CVP and SWP for fish protection during a water year as long as the water can be repaid without affecting the current or following year’s allocations. Borrowing of project water, specifically water in San Luis Reservoir, is intended to enhance the effectiveness and use of EWA assets. Project water in San Luis Reservoir may be borrowed to support an operational curtailment in lieu of immediately releasing an EWA asset when the borrowed water is not needed at that time to make project deliveries. Borrowing can only take place when the borrowed water would not create or exacerbate water quality and supply problems associated with the San Luis low point, and it meets reasonable carryover storage objectives.

An appropriate EWA asset will be pledged to assure that, if the borrowed water is not otherwise made up, release of the pledged asset will cause project deliveries not to be affected by the borrowing transaction.

4. Transfers Using Delta Conveyance

Transfers will be used to create assets south of the Delta out of assets upstream of the Delta. They can also be used to make acquisitions south of the Delta suitable for release to project use, where a change in the legal place or purpose of use or point of diversion of the water is needed.

APPENDIX B

Overview of First Year EWA Operation

In the year 2001, the EWA expects to make relatively small changes in the overall operations of the SWP, the CVP, and certain local and regional water agencies. The EWA is expected to have available to it certain "assets", defined by the ROD/Notice of Determination (NOD) (see Table 1). Any subsequent reference in this document to the ROD includes the EIS/EIR and NOD.

While the EWA is under no obligation to utilize each of the assets to the maximum extent possible, it could do so. Also, the actual asset mix generated for the EWA could vary somewhat from the nominal values, provided that substitute actions are functionally equivalent to the actions replaced. For example, the EWA might purchase less than 150,000 acre-feet of water south of the Delta and more than 35,000 acre-feet of water North of the Delta, if the year 2001 is a dry year.

The Department, USFWS, NMFS, and the California Department of Fish and Game are currently working on purchase, storage (including water), and source shifting agreements, called for in the ROD. Table 2 shows the maximum asset that could be acquired for the first year using State of California funds and facilities. The table also reflects the goals for each area targeted by the ROD.

Table 1. Maximum EWA Assets

Action Description	Water Available Annually (Average)
SWP Pumping of (b)(2)/ERP Upstream Releases[19]	40,000 acre-feet[20]
EWA Use of Joint Point[21]	75,000 acre-feet
Export/Inflow Ratio Flexibility	30,000 acre-feet
500 cfs SWP Pumping Increase	50,000 acre-feet
Purchases – South of Delta	150,000 acre-feet
Purchases – North of Delta[22]	35,000 acre-feet
TOTAL	380,000 acre-feet
Storage acquisition	200,000 acre-feet of storage, filled; acquired in Year 1[23]
Source Shifting agreement	100,000 acre-feet

[19] The EWA and the SWP will share equally the (b)(2) and ERP upstream releases pumped by the SWP after they have served their (b)(2) and ERP purposes.
[20] The amount of water derived from the first four actions will vary based on hydrologic conditions.
[21] The EWA will share access to joint point, with the CVP receiving 50% of the benefits.
[22] This is the amount of water targeted for the first year; higher amounts are anticipated in subsequent years. North of Delta assets assume a twenty percent carriage loss. The actual maximum quantity of water acquired will be approximately 45 TAF.
[23] Of the 200 TAF, 100 TAF would be retrievable within the year.

As stated in the ROD, immediate development of assets for the first year (January 1, 2001 – December 31, 2001) is critical to EWA success. Initial water purchases, lease of groundwater storage, and surface water storage will be secured from willing sellers by December 31, 2000. In addition to the assets to be acquired annually, as shown in Table 1, an initial one-time deposit of water equivalent to 200 TAF of south-of-Delta storage is proposed to be acquired from a variety of sources to assure the effectiveness of the EWA and provide assurances for SWP and CVP water supplies/deliveries. With EWA assets in place, pumping at SWP Delta export pumps will be reduced during critical periods for chinook salmon, delta smelt, splittail, or other fishery resources, at the discretion of the fishery agencies.

To acquire all assets listed in Table 1 in 2001, the EWA will rely on the operation of the SWP and the facilities of certain local and regional water agencies. Implementation of the EWA in the first year will not involve changes to the operation of the CVP, use of federal facilities, or use of federal funds. Therefore, the first year operation will be implemented as a state only action. Actions characterized by purchases, storage acquisitions, and source shifting agreements require a negotiated agreement between EWA and participating local and regional water agencies. Agreements that have been or are being negotiated for the acquisition of assets in 2001 are given below. Each agreement will be evaluated individually under CEQA. This Initial Study evaluates the Yuba County Water Agency water purchase agreement, and the description of other assets is included here as background information. Through these agreements, EWA will acquire only the amount of water that is needed and may not purchase all of the water offered.

Proposed Purchases South of Delta

- Agencies within Kern County Water Agency (KCWA): Up to 200 TAF will be made available from Westside Mutual, Rosedale Rio Bravo WSD, West Kern WD, Improvement District 4, Buena Vista WSD and Cawelo to the SWP for distribution either through exchange or direct groundwater pumping.
- Arvin-Edison Water Storage District: From 5 to 10 TAF will be made available through exchange or direct groundwater pumping.

Proposed Purchases North of Delta

- Yuba County Water Agency (YCWA): Yuba County Water Agency may release up to 50 TAF in 2001 during June 15 through August 31 for recovery by the EWA in the Delta via SWP pumps. The water would come from storage in New Bullards Bar Reservoir.
- Oroville-Wyandotte Irrigation District: Oroville-Wyandotte may release up to 10 TAF of water into Lake Oroville for use by the EWA.

Proposed Storage Acquisitions

- Agencies within KCWA: BVWSD, RRBWSD, WKWD, Westside Mutual, MWDSC (Semitropic) and Santa Clara Valley Water District (Semitropic) have offered to allow the EWA to deposit approximately 200 TAF of water into groundwater storage from December 2000 through mid-2001 or direct percolation.
- Arvin-Edison WSD: Arvin-Edison has offered to allow the EWA to deposit from 5 to 10 TAF of water into groundwater storage from December 2000 through mid-2001 or direct percolation.
- Santa Clara Valley Water District (SCVWD): SCVWD may take early delivery of up to 20 TAF of water and store it within its local system allowing the SWP to reduce delivery of a comparable volume of entitlement water later in the year.

Proposed Source Shifting Agreement

- The Metropolitan Water District of Southern California (MWDSC): MWDSC would defer 100 TAF to 200 TAF of its 2001 deliveries from the SWP from January through August 2001. Dependent upon water year type and mutual agreement of Department and MWDSC, initial water would be returned in 2001 and 2002. MWDSC will rely upon local storage to buffer the changed delivery pattern.

Table 2. EWA Maximum Asset Acquisition Targeting the ROD (in TAF)

North of Delta Goal (35 TAF)			**South of Delta Goal (150 TAF)**			**Groundwater Assets GW Storage/Extraction (200/100 TAF)**			**Additional Services**
	Dry	Wet		Dry	Wet		Dry	Wet	
Yuba	50	50	EWA Water in San Luis from CVP[24]	72	72	MWD (Semitropic)	32/0	32/32	100 MWD Source Shift
Oroville – Wyandotte	10	0	Westside Mutual 2000 purchase	15	15	Santa Clara Valley Water Dis (Semitropic)	30/30	30/30	Option for 100 additional MWD Source Shift in wet years
SNAGMA [25]	10	0	Westside Mutual 2001 wet only purchase	0	55	Semitropic	20/20	20/20	Option for Santa Clara 20 pre-delivery (reverse shift)
			Rosedale Rio Bravo 2000 purchase	19	19	Westside Mutual	50/50	50/50	Option to deposit 40 into Rosedale
			Arvin Edison 2000 Exchange/Purchase	10	10	Cawelo	20/20	20/20	Option to deposit 10 into Cawelo
			Arvin Edison 2001 Exchange/Purchase	10	10	Buena Vista/ Rosedale Rio Bravo/ West Kern	25/25	25/25	Option to deposit 30 in Santa Clara (Semitropic)
			Buena Vista Water Storage District/ Rosedale Rio Bravo Water Storage District/ West Kern Water District	0	35				Option for deposit 50 in Westside Mutual
			Nickel/ Improvement District No. 4 of the Kern County Water Agency	10	15				Option for deposit 10 in Arvin Edison
			Improvement District No. 4 of the Kern County Water Agency	10	30				
			The Water Company	13	13				
Subtotal	70	50		146	261		177/145	177/177	
Carryover Credit				21	5		17/17	116/116	
Carriage Losses	14	10							
TOTAL	56	40	TOTAL	167	266	TOTAL	194/162	293/293	
Carryover credit to next category:	21	5		17	116				

[24] See USBR Letter to USFWS, September 21, 2000 (Appendix H)
[25] Sacramento Northern Area Groundwater Management Authority (SNAGMA)

APPENDIX C

OPERATIONS CRITERIA FOR WATER TRANSFER IN 2001 FOR THE DEPARTMENT FROM YUBA PROJECT

The following criteria apply to requests by the Department with respect to the water transfer provided for in the Agreement:

1. Flows in the Yuba River during the June 15-August 31, 2001 period at Marysville Gage (USGS Station No. 11421000), greater than the sum of the minimum instream flow as prescribed in the Power Purchase Contract between Yuba and Pacific Gas and Electric Company, 1966 (70 cfs), and an operational buffer (7 cfs), will be accounted for as releases to the Department. A final decision issued for the State Board Lower Yuba River Hearing could result in a change in instream flows on the lower Yuba River. If Yuba is required to make changed instream flow releases at the Marysville Gage different from those cited in the Power Purchase Contract between Yuba and Pacific Gas and Electric Company, plus the buffer as described above, then the flow amount greater than the instream flow required at the time of the transfer will be accounted for as releases by Yuba to the Department.

2. The amount of water computed in the preceding paragraph shall be reduced to account for diversions from the Yuba River downstream from the Marysville Gage. The amount of reduction will be based on the period of release and the following monthly diversion amounts, with straight-line proportioning for partial months:

Month	Diversion Amount (Acre-Feet)
June 15-30	158
July	420
August	380

3. The amount of water computed in paragraph 1 above shall be further reduced by the amounts of any out-of-county Yuba water transfers that are based on the flows described in paragraph 1. The Transfer Water will be

accounted for first when Yuba accounts for transferred water at the Marysville Gage.

4. The maximum release from Englebright Reservoir for the Department shall not exceed 1,500 cfs.

5. The total water supply requested by the Department will be scheduled for essentially uniform delivery at the Marysville Gage, provided that increases of up to 300 cfs per day may be made to reach a uniform delivery schedule, and reductions of up to 200 cfs may be made over a 24-hour period.

6. The total amount of the transfer shall not be greater than the difference in Actual Storage in New Bullards Bar Reservoir on September 30, 2001, and 705,000 acre-feet, critical storage, minus the quantity(s) of water for other water transfers by Yuba.

7. Yuba shall carry out a water transfer (if any) from Yuba to other then the Department under this Agreement in a manner that does not impair Yuba's ability to fully comply with the terms of this Agreement.

APPENDIX D

NEW BULLARDS BAR RESERVOIR REFILLING CONDITIONS AND PROCEDURES FOR WATER TRANSFER FROM YUBA TO THE DEPARTMENT

The Department and Reclamation must be assured that the refilling of New Bullards Bar Reservoir after January 1, 2002, resulting from purchase of water from Yuba by the Department will not impact the Projects. Such impacts could occur (according to the Department and Reclamation) if storage vacated by the transfer is refilled during Balanced Conditions in the Delta. Yuba agrees that if there is an outstanding account of impacts after the 2002 reservoir refill period, Yuba will release additional water during subsequent Balanced Conditions in excess of normal operating requirements to compensate for impacts. The following procedures for determining impacts and conditions for additional releases will be used in accounting for refill. The Department will work with Reclamation to allocate the impact account between the Projects.

1. "Base Transfer" is the amount of water released for the Department from New Bullards Bar Reservoir determined by operations criteria in Exhibit A-1 [Appendix C], attached hereto and incorporated by reference.

2. "Impact Account" is the amount of water the Department and Reclamation would have obtained from the Yuba River in the absence of the transfer to the Department, but not received due to refilling of New Bullards Bar Reservoir in 2002. The amount of Impact Account water will be computed daily during the Refill Period based on balanced or excess conditions as used in the Coordinated Operations Agreement between the Department and Reclamation ("COA").

3. "Refill Period" is from January 1 through June 30.

4. "Target Storage" is those storage levels during the Refill Period at which Yuba would normally operate New Bullards Bar Reservoir without a water transfer to the Department. The levels are:

   a. January 1 through February 15 is 700,000 acre-feet.

b. February 16 through March 31 is linearly ramped from 700,000 acre-feet to 796,000 acre-feet.

c. April 1 through April 30 is linearly ramped from 796,000 acre-feet to 896,000 acre-feet.

d. May 1 through May 31 is linearly ramped from 896,000 acre-feet **to** 966,000 acre-feet.

e. June 1 through June 30 is 966,000 acre-feet.

5. "Actual Storage" is the amount of water physically in storage in New Bullards Bar Reservoir at any time.

6. "Theoretical Storage" is the sum of (1) Actual Storage on the day specified and (2) Transfer Amount Account.

7. "Excess Release Credits" occur if the total releases during the 2001 transfer period, which satisfy the operations criteria for transfer water in Exhibit A-1 [Appendix C], exceed the amount of transferred water for which payment is made. Such excess will be counted as a credit toward any subsequent refill obligations under this Agreement. The quantity of excess releases shall be verified by storage reductions beyond those made for the release of Transfer Water as defined in Exhibit A-1 [Appendix C]. If excess releases are made at a time when the Delta is not in Balanced Conditions, then there will be no Excess Release Credits granted towards subsequent refill obligations.

8. If Reclamation makes a flood release from Lake Shasta or the Department makes a flood release from Lake Oroville prior to achieving an Impact Account balance of zero, there will be no further requirements for releases by Yuba.

9. When Actual Storage exceeds the Target Storage during the Refill Period, there will be no further impacts.

10. The accounting procedure in attached Exhibit A-2 (“Operations Criteria”) [Appendix E], attached hereto, incorporating the definitions and concepts in this Exhibit, is to be used in calculating the Impact Account. General principles in Exhibit A-2 [Appendix E] are to be applied in accounting for any unusual operational conditions not set forth in the application example.

11. If the Transfer Amount Account is not zero on June 30, then the remaining amount of the Transfer Amount Account will be added to the Actual Storage on the following January 1, and the refill accounting procedure will be continued.

12. If there is an Impact Account balance on June 30, Yuba will release water during Balanced Conditions on a schedule that is agreed to by the Parties at a time when such releases would not create or affect deficiencies in local deliveries or instream flows, and shall be coordinated with releases for other (if any) water transfers of Yuba.

13. By October 21, 2001, the Parties shall complete an accounting of the Transfer Amount.

14. By July 31 of each year of refill, the Parties shall complete an accounting of the Impact Account until the requirement for accounting has been completed in accordance with Exhibit A-2 [APPENDIX E].

APPENDIX E

ACCOUNTING PROCEDURES FOR DETERMINING NEW BULLARDS BAR REFILL IMPACTS ON THE PROJECTS

The following columnar description sets forth the format, criteria, and procedures to be used for the determination of combined impacts to the Projects due to changes in refilling New Bullards Bar Reservoir caused by the 2001 transfer to the Department. An example of the application is attached.

COLUMNAR DESCRIPTION

Column 1 **-** Date

Column 2 - New Bullards Bar Reservoir Actual Storage as of 2400 hours.

Column 3 - Storage Reduction Credit. If Actual Storage is reduced during Balanced Conditions during the Refill Period, there can be a credit to the Impact Account and a corresponding addition to the Transfer Amount Account. The credit is limited to streamflow at the Marysville Gage attributable to the reduction in storage excluding reduction in storage for instream flows, with the operational buffer, and local diversions. If Actual Storage is reduced during other than Balanced Conditions during the Refill Period, there is no credit to the Impact Account.

Column 4 - Transfer Amount Account (Base Transfer on December 31, 2001) lists transfer water for which impact accounting is yet to be made. It is the previous day's amount minus the previous day's impact volume, plus storage reduction credits. (Note that storage reduction credits are also made to the Impact Account.)

Column 4 = Column 4 - Column 7 + Column 3

Any transfer amount account remaining after June 30 will be the initial (January 1) amount used in the subsequent year.

Column 5 **-** Theoretical Storage indicates the operation of storage as it might have occurred in the absence of the transfer. It is the actual storage plus the Transfer Amount Account.

Column 5 = Column 2 + Column 4

Column 6 - Target Storage is a postulated level of storage which New Bullards Bar might not normally exceed. When Column 5 exceeds this level, it is postulated that the storage would be reduced to the Target Storage amount. The Target Storage is defined as follows: January 1-February 15 (700,000); February 16-March 31 (ramped linearly to 796,000); April 1-30 (ramped linearly to 896,000); May 1-31 (ramped linearly to 966,000); and June 1-30 (966,000).

Column 7 - Impact Volume indicates daily amounts of water that would be released to achieve the
Column 6 Target Storage.

Column 7 = (Column 5 - Column 6) but not less than zero, and not greater than Column 4

Column 8 - Delta Conditions are determined jointly by the Department and Reclamation in accordance with the COA. A "1" is listed if the Delta is declared to be in Balanced Conditions, a zero or null **"-"**is listed when the Delta is declared to be in excess conditions. The amount of Theoretical Storage above the Target Storage on December 31, if any (Column 5 **-** Column 6), is deducted from the Transfer Amount Account (Column 4) on January 1.

Column 9 - Net Daily Impact is the daily impact volumes minus storage reduction credits when the Delta is in Balanced Conditions as indicated in Column 8.

Column 9 = (Column 7- Column 3) x Column 8

Column 10 - Impact Account is the accumulation of Net Daily Impacts.

Column 10 = Column 10 (previous day) + Column 9

The December 31 value includes any excess releases that exceed the maximum transfer amount yet satisfy transfer criteria. If the accounting is carried

forward into subsequent years, the repayment releases made during the June through September period will be credited on the December 31 entry.

APPENDIX F

Environmental Checklist Form

1. Project title: Year 2001 Water Exchange Agreement With Yuba County Water Agency for Support of the Environmental Water Account

2. Lead agency name and address:

   California Department of Water Resources
   3251 "S" Street
   Sacramento, CA 95816

3. Contact person and phone number:

   Delores Brown (916) 227-2407

4. Project location: Sierra Foothills and Sacramento and San Joaquin Valley.

5. Project sponsor's name and address:

   Department of Water Resources
   3251 "S" Street
   Sacramento, CA 95816

6. General plan designation: N/A 7. Zoning: N/A

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

   See Initial Study, Project Description.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

   See Initial Study, Environmental Setting.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

    California Department of Fish and Game, State Water Resources Control Board

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Agriculture Resources		Air Quality
	Biological Resources		Cultural Resources		Geology /Soils
	Hazards & Hazardous Materials		Hydrology / Water Quality		Land Use / Planning
	Mineral Resources		Noise		Population / Housing
	Public Services		Recreation		Transportation/Traffic
	Utilities / Service Systems		Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

✓	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Delores Brown — December 6, 2000
Signature — Date

Barbara J. McDonnell — December 6, 2000
Signature — Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were

incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

Issues:

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				✓
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				✓
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			✓	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
precursors)?				
d) Expose sensitive receptors to substantial pollutant concentrations?				✓
e) Create objectionable odors affecting a substantial number of people?				✓
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				✓
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				✓
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				✓
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				✓
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
policy or ordinance?				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in ?15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to ?15064.5?				✓
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✓
d) Disturb any human remains, including those interred outside of formal cemeteries?				✓
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				✓
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				✓
ii) Strong seismic ground shaking?				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
iii) Seismic-related ground failure, including liquefaction?				✓
iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?				✓
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				✓
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✓
VII. HAZARDS AND HAZARDOUS MATERIALS **?** Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				✓
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				✓
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
proposed school?				
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				✓
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				✓
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?				✓
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater			✓	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				✓
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				✓
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				✓
f) Otherwise substantially degrade water quality?			✓	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				✓
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
j) Inundation by seiche, tsunami, or mudflow?				✓
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				✓
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				✓
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓
XI. NOISE ? Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				✓
b) Exposure of persons to or generation				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
of excessive groundborne vibration or groundborne noise levels?				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓
XII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				✓
Fire protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓
XIV. RECREATION --				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
trips, the volume to capacity ratio on roads, or congestion at intersections)?				
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				✓
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
e) Result in inadequate emergency access?				✓
f) Result in inadequate parking capacity?				✓
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				✓
XVI. UTILITIES AND SERVICE SYSTEMS **?** Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
significant environmental effects?				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project? s projected demand in addition to the provider? s existing commitments?				✓
f) Be served by a landfill with sufficient permitted capacity to accommodate the project? s solid waste disposal needs?				✓
g) Comply with federal, state, and local statutes and regulations related to solid waste?				✓
XVII. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				✓
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
other current projects, and the effects of probable future projects)?				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				✓

APPENDIX G

Article 19 Objectives for Water Quality Parameters

Parameter	Units	Article 19 Objective		
		Monthly Average	10 Year Average	Maximum
Arsenic				0.05
Boron				0.6[26]
Chloride	mg/L	110	55	
Hexavalent Chromium				0.05
Copper				3.0
Fluoride				1.5
Iron + Manganese				0.3
Lead				0.1
Selenium				0.05
Sodium	%[27]	50	40	
Total Dissolved Solids	mg/L	440	220	
Total Hardness as $CaCO_3$	mg/L	180	110	
Zinc				15

[26] Monthly Average
[27] Percentage of cationic composition

APPENDIX H

Letter From USBR to USFWS Entitled:

Informal Consultation And Request For Concurrence With Determination Of Not Likely To Adversely Affect For Proposal To Use Water Acquired From Kern Water Bank Authority For The Environmental Water Account

MP-410
ENV-1.10

SEP 21 2000

MEMORANDUM

To: Field Supervisor, U.S. Fish and Wildlife Service, Sacramento CA
Attention: Wayne White

From: John F. Davis FOR /s/ CHARLES B. JOHNSON JR.
Regional Resources Manager

Subject: Informal Consultation and Request for Concurrence with Determination of Not Likely to Adversely Affect for Proposal to Use Water Acquired from Kern Water Bank Authority for the Environmental Water Account

In May 2000, Reclamation finalized an Environmental Assessment/Finding of No Significant Impact for the *Temporary Water Acquisition in Support of Bureau of Reclamation Water Year 2000-2003 Operations* that included a concurrence by the U.S. Fish and Wildlife Service that the proposed action of acquiring 72,000 acre-feet of water is not likely to adversely affect listed species. Referring to your memorandum dated May 19, 2000, this concurrence was conditional that if the acquired water were to remain in San Luis Reservoir after February 28, 2001, Reclamation would consult with the U.S. Fish and Wildlife Service on any future use of the water. Reclamation has determined that the acquired water may remain in storage at San Luis Reservoir past the above indicated date for use by the Environmental Water Account (EWA), once the EWA becomes operational. Reclamation has the ability to use this water until June 30, 2001, the period for which the State Water Resources Control Board action is approved. Although it is possible that the EWA may expend the 72,000 acre-feet prior to February 28, 2001, it is almost certain that this EWA asset will be expended before June 30, 2001. In either case the use of this EWA asset is to benefit listed species. No changes in use from those already documented in the referenced environmental assessment will occur. For these reasons, Reclamation has determined that this proposal is not likely to adversely effect any listed species nor adversely modify any designated critical habitat.

We would appreciate your written concurrence with our finding within 30 days upon receipt of this letter. Please contact Mary Johannis, our EWA Program Manager at (916) 978-5202 (TDD 978-5608) if you have any questions.

Thank you for your ongoing assistance with this project.

cc: Field Supervisor, U.S. Fish and Wildlife Service, Sacramento CA
Attention: Joel Miller
Endangered Species Division, U.S. Fish and Wildlife Service, Sacramento CA
Attention: Peter Cross

bc: MP-150, 400, 410